

RELATIONSHIP BETWEEN ATTITUDE, MOTIVATION AND
OCCUPATIONAL TASK PERFORMANCE IN TEACHING ENGINEERING
DRAWING AMONG TECHNICAL EDUCATION TEACHERS IN NIGERIA

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A thesis submitted in
fulfilment of the requirement for the award of the
Doctor of Philosophy

Faculty of Technical and Vocational Education
Universiti Tun Hussein Onn Malaysia

February, 2018.

This work is dedicated to my beloved wife Binta Yakubu and my beloved children, Hauwa'u, Shuaibu, Aliyu, Salamatu, Ahmad and Nana-A'ishatu who have inspired me and given me the strength to the end of this journey. Without their love, endless prayers, patience, understanding and support, I would not have been able to devote so much time and effort to my research.



PTTA UTHM
PERPUSTAKAAN TUNKU TUN AMINAH

ACKNOWLEDGEMENT

In the name of Allah, the Beneficent, the merciful. Alhamdulillah, all praise is to ALLAH (SWT) for the wisdom, courage and strength given to me in the cause of carrying out this research programme. I wish to express my immense and profound gratitude to my supervisor Professor Dr. Maizam Binti Alias, for her thoughtful and expertise suggestions at various stages of this work up to its logical completion. I also like to appreciate the effort of Assoc. Prof. Dr. Halizah Binti Awang, Dr. Kahirol Bin Mohd Salleh for their supports and encouragements to the completion of my research programme. It was their guidance and directions put together that made this thesis a reality.

My special appreciation goes to Dr. Usman Ladan Kurya, Dr. Bala Ishiyaku and Mohammad Ishaq for their invaluable assistance and directions that paves the ways to the ideas used in this study. My heart-felt gratitude goes to Ustaz Dauda Muhammad Mshelizah for his moral support, advices and kind overseeing of my family throughout my absence. I also want to acknowledge the contributions of the Lecturers of Schools of Technical Education (SOTE) from the six tertiary institutions (Federal Colleges of Education (Technical) (FCETs), Bichi, Gombe, Gusau and Potiskum; College of Education (COE) Mina, and Kaduna Polytechnic) that participated in this study. I wish to appreciate the assistances of Ali Garba Rishi, Aliyu Sabo, Dr. Mustapha Gambo and Iliyasu Hussein in this study. Thank you all for the assistance, kindness and encouragement given to me during my study.

Last but not least, once again I thank the managements of TETFUND and Federal College of Education (Technical), Gusau for providing me the opportunity and financial support to undertake my Doctoral studies at the Universiti Tun Hussien Onn Malaysia. Finally, I thank Almighty Allah “**ALHAMDULILLAH**”, the Lord of the universe for His abundant grace and special favour granted me to write this thesis. Ultimately, whatever good is derived from this piece, all praise is due to Him but any error contained therein is my own and are highly regretted.

ABSTRACT

Engineering Drawing is a communication tool in the technical and engineering fields. Teachers in technical education institutions in Nigeria however, have not been successful in teaching Engineering Drawing, as indicated by the consistently poor performance of students in Engineering Drawing over the years. Literatures from organisational psychology indicate that attitude and motivation are two factors that can affect performance. Therefore, the purpose of this study was to investigate how much attitude and motivation influence teachers' occupational task performance in teaching Engineering Drawing among the Nigerian technical teachers. It was postulated that teacher' overall attitudes and attitudinal components; overall motivation and its elements have influence on their occupational tasks performance in teaching Engineering Drawing. A cross-sectional survey design was used with three instruments developed (teachers' attitude scale, teachers' motivation scale and teachers' performance scale) to collect data on attitude, motivation and performance towards teaching Engineering Drawing. Two hundred and thirty-two (232) respondents were selected from technical education teachers who were teaching Engineering Drawing courses in six tertiary technical education institutions in Northern Nigeria. Structural equation modelling method was used to validate the proposed causal model. The findings provide empirical evidence for the significant influence of teachers' attitudes and motivations on their occupational task performance in teaching Engineering Drawing. The findings also indicate that all attitudinal and motivational components, with the exception of the cognitive component of attitude, influence performance in teaching Engineering Drawing. Despite their influence on teaching performance, attitude is not found to be associated with motivation. The study concludes that both attitude and motivation play important roles in ensuring effective teaching performance of Engineering Drawing teachers in tertiary technical institutions in Nigeria.

ABSTRAK

Lukisan Kejuruteraan merupakan alat komunikasi dalam bidang teknikal dan kejuruteraan. Walau bagaimanapun, para pengajar di institusi pengajian tinggi teknikal di Nigeria masih belum mampu mengajar Lukisan Kejuruteraan dengan berkesan, berdasarkan pencapaian yang konsisten rendah dalam kalangan pelajar dari dahulu hingga kini. Literatur daripada psikologi organisasi menunjukkan bahawa sikap dan motivasi sebagai dua faktor yang boleh memberi kesan kepada prestasi. Oleh itu, tujuan kajian ini adalah untuk menentukan sejauh mana sikap dan motivasi mempengaruhi prestasi kerja pengajar teknikal Nigeria dalam mengajar Lukisan Kejuruteraan. Andaian kajian ini adalah; keseluruhan sikap dan komponen sikap pengajar; keseluruhan motivasi dan unsur-unsurnya boleh mempengaruhi prestasi kerja mereka dalam pengajaran Lukisan Kejuruteraan. Reka bentuk tinjauan keratan lintang telah digunakan dengan pembangunan tiga instrumen (skala sikap pengajar, skala motivasi pengajar dan skala prestasi pengajar) untuk mengumpul data bagi sikap, motivasi dan prestasi dalam pengajaran Lukisan Kejuruteraan. Seramai dua ratus tiga puluh dua (232) responden telah dipilih dalam kalangan pengajar pendidikan teknikal yang sedang mengajar kursus Lukisan Kejuruteraan di enam buah institusi pengajian teknikal di Utara Nigeria. Kaedah pemodelan persamaan berstruktur telah digunakan untuk mengesahkan model penyebab yang dicadangkan. Dapatan kajian ini memberikan bukti empirik bagi pengaruh sikap dan motivasi pengajar yang signifikan terhadap prestasi kerja dalam pengajaran Lukisan Kejuruteraan. Dapatan kajian ini juga menunjukkan bahawa semua komponen sikap dan motivasi, kecuali komponen kognitif bagi sikap, mempengaruhi prestasi kerja dalam pengajaran Lukisan Kejuruteraan. Walaupun terdapat pengaruh sikap terhadap prestasi pengajaran, tiada kaitan antara sikap dengan motivasi. Kesimpulannya, kedua-dua sikap dan motivasi memainkan peranan penting ke arah memastikan prestasi pengajaran berkesan dalam kalangan pengajar Lukisan Kejuruteraan institusi pengajian tinggi teknikal di Nigeria.

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LIST OF SYMBOLS AND ABBREVIATION

ED	Engineering Drawing
B.Ed (T)	Bachelor of education Technical
HND	Higher National Diploma
PhD	Doctor of Philosophy
NPE	National Policy on Education
NCE (T)	Nigeria Certificate in Education (Technical)
NCCE	National Commission for Colleges of Education
NABTEB	National Business and Technical Examination Board
TVET	Technical and Vocational Education and Training
FCET	Federal Colleges of Education (Technical)
FGN	Federal Government of Nigeria
EFA	Exploratory Factor Analysis
CFA	Confirmatory Factor Analysis
SEM	Structural Equation Modelling
AMOS	Analysis of Moment of Structures
SPSS	Statistical Package for Social Science

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CHAPTER 1

INTRODCUTION

Education is a fundamental sector in promoting the growth and development of a nation (Kingdom & Maekae, 2013) as through education human resources are produced. In stressing the importance of education, Dominic, Joshua, & Jide (2015); Hanushek & Wößmann (2007) stated that a developed or educated society is one that has enough human resources and each individual person occupies his or her rightful position to contribute to the growth of his society. Thus, education is perceived as an indispensable tool which does not only assist in meeting the nation's social, political, moral, cultural and economic aspirations but also inculcates in the citizens knowledge, skills, dexterity, character and desirable values that promotes national development and self-actualization (Ugwu, 2015).

Technical and vocational education on the other hand is a form of education that in addition to general education, it facilitates the study of technologies and related sciences and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupations in various sectors of economic and social life' (NPE 2004). Technical and Vocational Education and Training (TVET) plays a vital role in technological advancement of any country as it has continued to gain prominence globally as a change agent for social, economic, technological and national development (Raimi, and Akhuemonkhan, 2014). TVET provides a pool of talented, knowledgeable and skilful persons who are creative and capable of designing, fabricating and maintaining machines and devices used to explore and process local resources for economic and technological development of the nation (Legg-jack, 2014).

For obvious reasons, many countries have showed great concern for education in general, and TVET in particular as it facilitates rapid development of the social and economic infrastructures critical for the growth of nations (Medupin, Abubakre, Adebayo, Enock, & Sulayman, 2015 ; Ashaolu, 2014). Recognizing the role of TVET, many developing countries are expanding their efforts in promoting TVET in their tertiary institutions, with the strong belief and confidence that skill development enhances productivity and sustains competitiveness in the global economy.

The TVET sector promotes rapid development in most countries of the world, particularly, the developed ones (Raimi, and Akhuemonkhan, 2014). No nation can hope to develop and grow technologically without trained individuals with relevant skills, knowledge, attitudes and abilities required to form an effective workforce in all sectors of her economy.

The emphasis placed on sound technical and vocational education programme stems from the fact that the growth and development of any country revolve around effective technical and vocational education policy and its implementation. Although, the implementation strategy and the overall development of TVET is a complex process determined by factors that are highly dependent on the professionalism and competence of stakeholders. The implementation of TVET cannot be made effective without the presence of highly trained technical and vocational teachers who are capable of imparting the right knowledge, skills and attitude to youths who will be meeting the human resources needs of the industries and other sectors of the economy (Christopher, and Chukwuma, 2014).

TVET has the potential to improve the socio-economic sector of the country. It is a vital investment for human and economic development and is influenced by the environment within which it exists. TVET is considered as a powerful instrument in bringing about the desired changes be it economic, socio-cultural and political or technological changes (Udoh & Akpan, 2014; Adu-tutu, 2014). These desired changes could not be made possible without effective teaching and learning which is determined by effective and efficient educational resources.

In Nigeria, education and technical education in particular has always been on the top priority list of the country's development plans, yet it is still far from being ready for the challenges of the 21st-century world of work. Numerous scholars e.g. (Yusoff, 2013; Oseni, 2011; Geneva, 2008 & Isyaku, 2002) suggested that the problem is connected to the quality of the teachers in the country. For example, Isyaku (2002)

pointed that “no nation can rise above the quality of its teachers”. The effects are more severe with TVET as a skilled oriented programme from which the nation’s technological achievements are made possible. Therefore, quality skills, creativity and expertise of the nation’s teachers count in its quest for technological development and emancipation. These characteristics cannot be achieved without adequate knowledgeable, dedicated, motivated and committed teachers and functional curriculum.

According to Ugwu, (2015) a teacher is a “professional, who in an educationally and morally accepted manner, imparts knowledge, and learning experiences at his/her disposal to stimulate, guide, direct and facilitate learners to acquire adequate mastery of the skill being imparted”. In other words, a teacher is a person knowledgeable in a given discipline who provides education for students. Teachers are often considered as the most essential among the educational resources. They facilitate, shape and model the whole process of education (Hassan & Maizam, 2016; Coe, Aloisi, Higgins, & Major, 2014). A teacher by the virtue of his position and role is one of the principal agents of the transmission, acquisition of knowledge. In addition, the teacher also acts as a principal agent in the transmission and development of culture in today’s society. He is the one who influence or defaces students’ personality through his teaching. The teacher deals with the human material during the most impressionable period of life. He is obliged to make a tremendous impact on the character, personality, intellectual growth, attitude and value on students’ future (Shahmohammadi, 2014). Thus, the teacher should have a keen sense of values, positive attitude and a good ability for teaching so that he can guide the entire generation. Consequently, the preparation of such an important functionary must be given the highest priority.

1.1 Background

In Nigeria, the roles played by teachers in most educational institutions particularly in technical education institutions so far has not been encouraging by their quality and performance. For example, studies conducted on TVET teachers by Karumba (2014), Dasmani (2011) and Puyate (2008) revealed that the majority of TVET trainee teachers fail their final year examinations. Failures of TVET trainee teachers were

attributed to many challenges facing them such as poor teacher motivation (Saleem, 2014; Said Salim Ahamed Al-Harthy, 2013), negative teachers' attitude (Karr, 2011; Mucci, 2010; poor teaching and learning environment (Idialu, 2009), inadequate subject mastery by the teacher (Abdulwahab & Usman, 2014), and poor teaching method used by the teachers (Anike & Mercy, 2015; OECD, 2010). In addition, Sariçoban & Sakizli, (2006) stressed that internal and external factors such as attitudes, motivations and methods of teaching and the classroom atmosphere all together affects teachers teaching effectiveness. Effective teaching and learning take place only when the environment is conducive for both the teacher and the learner (Idialu, 2009).

Researchers and scholars on teaching and learning of Engineering Drawing in technical institutions such as Abdulwahab and Usman (2014); Elom (2014) and Kosse and Senadeera (2011) have in their various works revealed that technical teachers use traditional method in teaching Engineering Drawing and they are in short of some desired Engineering Drawing competencies that limit their performance to the few they can handle leaving other areas of competencies un-taught. When such practices continue, the end result of the teaching and learning of the Engineering Drawing in most technical institutions, particularly at the tertiary levels will lead to students' poor performance and the development of negative attitude with regard to the Engineering Drawing course. In a related study, the teaching methods used by technical teachers was discovered to be one of the major factor causing students' poor performance in Engineering Drawing in most technical institutions. As result, there is a demand for radical consideration of innovative teaching methods so as to be able to develop and promote expertise among the technical education students to be able to function effectively in their future careers (Zhu & Wang, 2014 and Sarfo, 2011). According to Igbinomwanhia and Aliu 2013; Diraso *et al.* (2013); Khoza (2004) major factors resulting in students' poor academic performance in Engineering Drawing are, teacher factor; teaching and learning environment coupled with inadequate time allocated to the course; lack of necessary instruments/equipment and poor students' background, makes them perform poorly.

Teacher factor in any school context can have significant effects on various school outcomes measures particularly students' academic achievement. Gurney (2007) and Azam & Kingdon (2014) stated that teacher factors involve two major issues, teacher quality and teaching quality. The teacher qualities are bundles of

personality traits, skills, and understandings the teacher brings to teaching, including dispositions to behave in certain ways. Whereas teaching quality has to do with the teachers' knowledge, skills, and dispositions with strong instructional methods used by the teachers that enable a wide range of students to learn (Darling-hammond, 2009).

Teachers' quality with respect to attitudes and motivations towards teaching performance are two essential factors that require critical empirical analysis. Literatures have shown that attitudes and motivation have a crucial role in educational achievements (Pintrich & Schunk, 1996). They are rooted in experience and do not become automatic, routine conduct. Additionally, "attitude" means the individual's prevailing predisposition to respond favourably or unfavourably to an object (person or group of people, institutions or events) (Morris, Charles, & Maisto, 2003). Attitude is defined as a learned predisposition to respond in a consistently favourable or unfavourable manner with respect to a given object. Attitudes are habitual ways of reacting to situations (Fishbein & Ajzen, 1975). It is a term reserved for an opinion, which denotes a person's total inclination towards an object, idea or institution. Attitudes can be positive (values) or negative (prejudices) or neutral. Attitude can then be seen as a predisposition to perceive, feel or behave towards specific objects or certain people in a particular manner. Ben-Yami (1997) affirmed that different individuals have different mental dispositions such as beliefs, intentions, likes and dislikes, experiences, hopes and desires. All these characteristics are components of attitude which may affect teaching Engineering Drawing.

According to Kreitner, Kinicki, & Cole (2007), there are three components of attitudes: affective, cognitive and behavioural. The affective component is a feeling and emotion one has towards an object or situation. The cognitive component is the knowledge and skills one has about an object or situation, while the behavioural component of attitude on the other hand symbolises how one plans to act or behave towards circumstance someone or something (Kreitner *et al.*, 2007). In most situations, the three components appear concurrently to shape teachers' classroom postures, through direct and indirect interaction between society, school and teachers (Leite, 1994). Besides, teachers' styles and attitudes are strong context outcomes entrenched in experience. According to Pintrich & Schunk (1996), teachers with positive attitudes and motivated display interest in school activities, feel self-efficacious, expand efforts to succeed, persist at teaching tasks, and use innovative strategies to accomplish educational goals.

There has been a number of studies for example, Patrick (2014); Ahmad, *et al.* (2013); Mattoo & Buchoo (2014); Chandrakant Borase (2014); and Abdullah, Abidin, Luan, Majid, & Atan (2006) that investigated effects of teachers' attitude on their teaching performance in general; the teaching attitude of teachers affects their behaviours in the classroom, the behaviour of their students as well as how attitudes have influence on performance. They found out that there is a significant relationship between attitude towards teaching and academic achievements and that teachers who possess positive attitudes perform better in the teaching process than those with negative attitudes. Their positive attitudes towards teaching made them punctual in school, respect their colleagues, students and engage in school academic activities enthusiastically. Consequently, the opposite is that teachers with negative attitudes tend to exhibit behaviours that are incongruent with the objectives of school (Iwu, Gwija, Benedict, & Tengeh, 2013). Thus, most of these studies submitted that teachers' attitude towards teaching is among the important factors that enhance their occupational task performance in a classroom setup.

Motivation, on the other hand, is a force, whether internal or external factors that drives an individual to achieve a certain goal. Motivation is defined as something that energizes, direct and sustains behaviours towards goal-directed behaviour (Valencia, 2012). In a study conducted by Mahama (2012) and Akram, (2010), they remarked that teacher motivation is an important factor in teaching profession because it is highly correlated with the quality of education.

So many studies showed that reinforcement, particularly the use of assorted fascinating activities, emerging techniques, setting expectations and use of rewards, creation of conducive working environment in schools and provision of adequate teaching materials, plays an influential role in teaching and learning process, teachers would be motivated to perform better hence good students' performance in the examinations (Gitonga, 2014; Nyakundi, 2012; Abdulsalam & Mawoli, 2012 and Ololube, 2006). As such, educational administrators have obligations of ensuring that teachers perform their tasks to the best of their abilities through improved environment for motivation. The work of Wu, Tsai, Yang, Huang, & Lin (2012) revealed the teachers' characteristics, students characteristics, extents and levels of enthusiastic teaching approaches, and properties of the subject influenced motivation to teach and learn the subject. From the above review, the studies assessed either teacher's attitude

and motivation or both, and the role the two factors play in teaching effectiveness and students' performances in examinations of diverse subjects at different levels.

1.2 Statement of the problem

The poor and differential scholastic achievements of students in Engineering Drawing courses in technical colleges and tertiary institutions in Nigeria have been a continuous source of concern (Abdulwahab & Usman, 2014; Igbinomwanhia & Aliu, 2013; Kudabo, 2012). This is evident in the five years (2009 to 2013) results of students' performances in National Business and Technical Examination Board (NABTEB) in building/mechanical drawing course. Table 1.1 shows the details of the student performances in building/mechanical drawing courses.

Table 1.1: Students' performances in building/mechanical Engineering drawing courses GTC) Gamawa exams and records office

YEAR	No. OF STUDENTS	CREDIT A1-C6	% CREDIT A1-C6	PASS P7-P8	PASS P7-P8	No. Fail	% FAIL
2009	130	7	5.38	57	43.84	66	50.79
2010	158	4	2.53	100	63.29	54	34.17
2011	204	60	29.41	128	2.74	15	7.35
2012	232	7	3.01	7	3.01	218	93.96
2013	31	84	25.37	41	42.59	106	32.02
TOTAL	1,055	162		433		460	

The result in table 1.1 shows that in the period under review, only 162 students representing 15.35% passed their course at credit level, while 893 students representing 84.65% will not be able to secure admission into any tertiary institutions in Nigeria, because a minimum of five (5) credits is required to qualify an applicant to secure the admission. Based on previous literature review findings, the poor performance of the students could be attributed to teachers' performance in teaching Engineering Drawing. Teachers' performance on the other hand could be attributed to their motivation and attitude.

Although numerous studies have been conducted in Nigeria and other countries addressing teachers' attitudes and motivations, most of the studies were based on the effects of these factors separately. Some of the studies examined teachers attitude e.g. Kamal & Muideen (2014); Omoniyi, Akinsete, Omoniyi & Mary (2013);

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